

Date: Wednesday, 02/04/2008 3:39:40 PM  
 User: Julie Lecocq

## Process Sheet

<b>Customer</b> :	CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> :	CROSSTUBE EXTRUSION (407 AFT)
<b>Job Number</b> :	38344		
<b>Estimate Number</b> :	11978		
<b>P.O. Number</b> :		<b>Part Number</b> :	D6011115
<b>This Issue</b> :	02/04/2008	<b>S.O. No.</b> :	
<b>Prsht Rev.</b> :	NC	<b>Drawing Number</b> :	D6011 REV A1
<b>First Issue</b> :	11	<b>Project Number</b> :	N/A
<b>Previous Run</b> :	34689	<b>Drawing Revision</b> :	A1
<b>Written By</b> :		<b>Material</b> :	
<b>Checked &amp; Approved By</b> :	<u>JD 08.4.03</u>	<b>Due Date</b> :	26/09/2008
<b>Comment</b> :	Est Rev:A 01.08.17 New Issue SM	<b>Qty:</b>	20
	est rev B 07.09.18 rev A1 dwg EC verified by:JLM	<b>Um:</b>	Each

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
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1.0	PG	PURCHASING
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Comment: PURCHASING

Issue P/O: 6063

C208/04/04 (20)

- a) Order as per Dwg D6011
- b) Material: 2.750 x 0.650 wall 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube
- c) Minimum ultimate tensile strength = 77 ksi
- d) Minimum tensile yield strength = 66 ksi
- e) Tolerance are per ASTM B210 (see details on Dwg D6011)
- f) Material certification required

2.0	D6011115P	Crosstube Material
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Comment: Qty.: 1.0000 Each(s)/Unit Total: 20.0000 Each(s)  
 Crosstube Material

3.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1  
 Receive & Inspect For Transit Damage  
 Ensure material certification is attached

(M109279)

JS 08/09/16

(22)

4.0	QC6	DIMENSIONAL CHECK
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Comment: DIMENSIONAL CHECK  
 Ensure Material certification comply to Dwg

S08/09/16 counter (22)

W/O:		WORK ORDER CHANGES						
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Wednesday, 02/04/2008 3:39:40 PM  
User: Julie Lecocq

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: CROSSTUBE EXTRUSION (407 AFT)

Job Number: 38344

Part Number: D6011115

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

W/A S edel 17

6.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: X tube cell

BT 08-09-18 (22)

7.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

08/09/18

Job Completion



MF 08-09-18

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

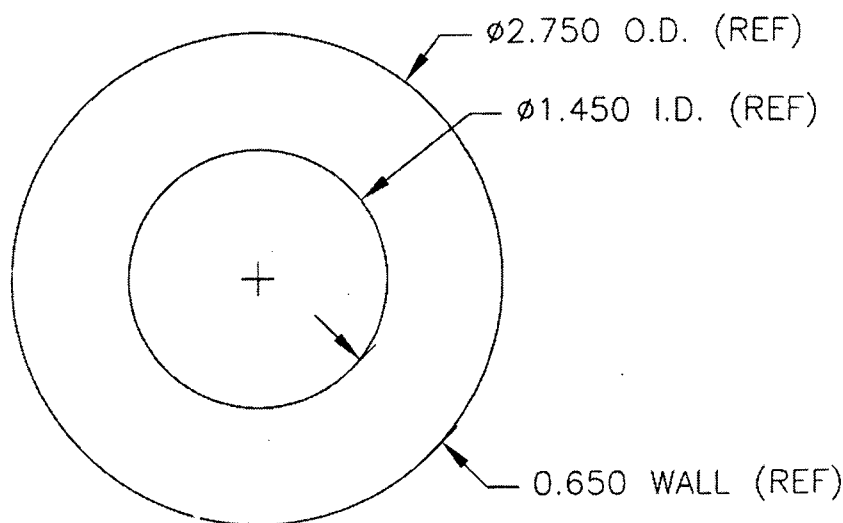
**NOTE:** Date & initial all entries



DESIGN #	DRAWN BY KF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D6011	REV. A SHEET 1 OF 1
DATE 01.08.16		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	01.08.16	NEW ISSUE	
A1	# 02-01-29	UPDATE TOLERANCE ON OD	

## SPECIFICATION CONTROL DRAWING

RELEASED  
01.08.17



### NOTES

- 1) D6011-XXX CROSSTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 115" LONG TUBE: D6011-115

- 2) MATERIAL: 2.750 OD x 0.650 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ~~ASTM B210 AS FOLLOWS~~ ANSI H35.2 AS FOLLOWS  
O.D.:  $\pm 0.006$  MEAN ( $\pm 0.012$  INCLUDING OVALITY)  $\pm 0.015$  MEAN ( $\pm 0.030$  INCL. OVALITY)  
WALL:  $\pm 0.020$  MEAN ( $\pm 0.065$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.125/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

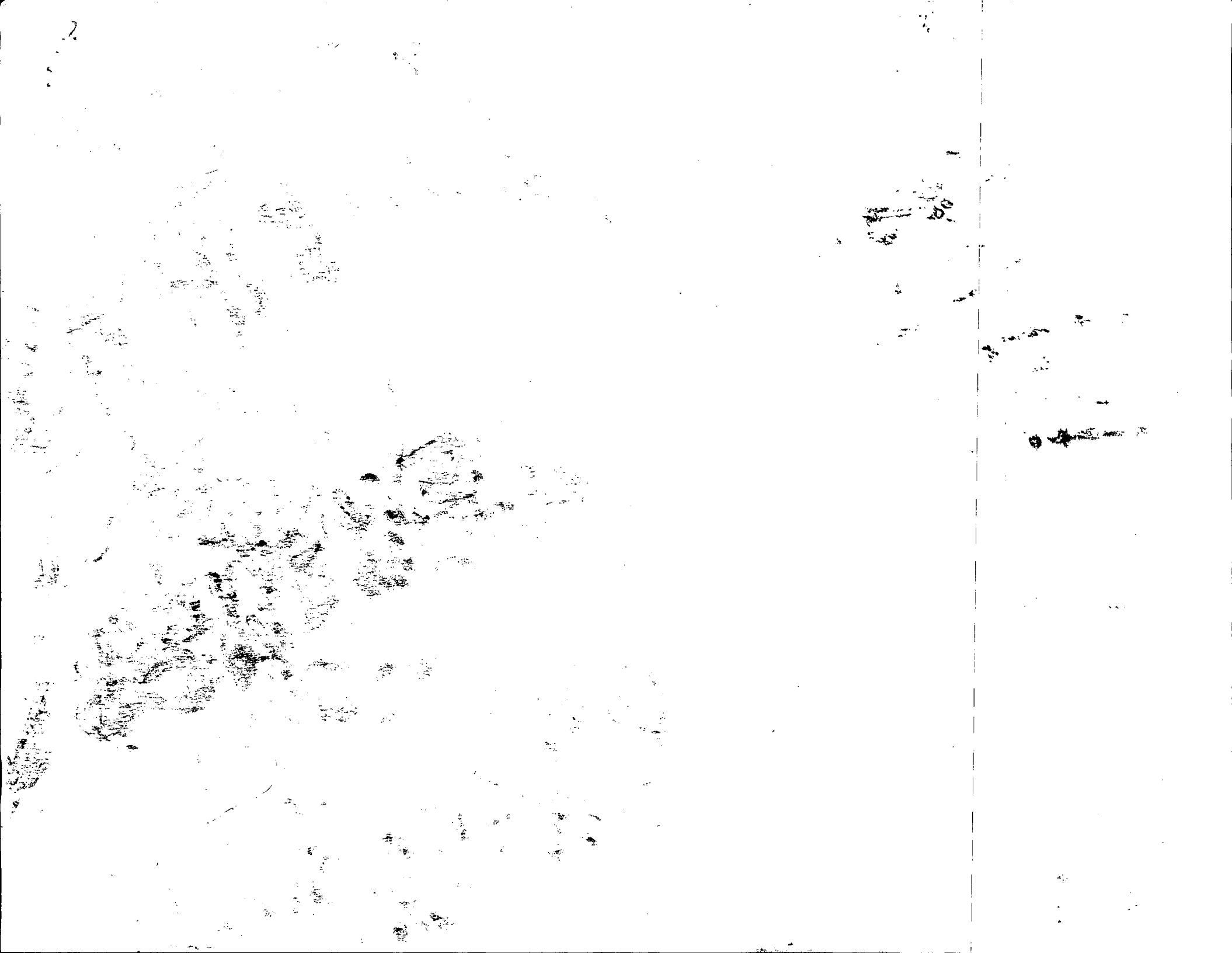
SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER

NO. 36344



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# Abnahmeprüfzeugnis 3.1 - EN 10204:2004

Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004

**Kunde:** Dart Aerospace Ltd.  
**Client:**

1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada

**Zeugnisnummer:** 1217/08

**Cert No. / No. du certificat:**

**Bestellnummer:** PO00006063

**Order No. / No. de commande**

**Auftrag:** 29104/2

**Our Reference/Notre Reference:**

**Produkt:**

**Product / Produit:**

**Spezifikation:**

**Specification:**

**Werkstoff:**

**Alloy/Alliage:**

**Abmessung**

**Size / Dimension**

**Kennzeichnung**

**Marking/Marquage:**

**Lieferung**

**Delivered Material / Matériel délivré:**

7075

2,750 INCH x 1,450 INCH x 0,650 INCH x 115,00 INCH  
buff finish

ALUnna - Cert No. 1217/08 - 7075 - T 6511 - Cast No. 81742 - AMS QQA 200/11 - 2.750" OD X 0.650" Wall - Heat Lot No. 1840 - ALUnna Order Conf. No. 29104/2-1 PO. 00006063

**Zustand:**

**Temper/État**

T6511

pcs.

lbs

22

1096

**Country of Manufacture: Germany**

## 1. Chemische Analyse

## Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
81742	0,07	0,13	1,38	0,04	2,45	0,19	5,73	0,04	0,01	0,03	0,01	0,01	0,0001

**Hydrogen content:** <0,10

**ccm/100 g Al** Elements without indication < 0,01 %

**country of melt manufacturer: Germany**

## 2. Mechanische Eigenschaften

## Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
min.	77,0	66,0				
max.						
1	88,160	81,635	12,0			1840 - 22 pcs.
2	88,595	82,215	12,0			

RMS outside 25 - max. 9,9 µ"

**Ergebnis der  
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

**Test results:**

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

**Resultats:**

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

KrampeR

15.08.2008



Certified acc. DIN EN ISO 9001:2000 and DIN EN 9100:2003

valid until 2010-11-11

Reg.-No.: 001959 QM; 001959 ASH

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany



ALUnna

Abnahmebeauftragter

686938

**Boxmarking:**

**We hereby declare that the wooden packing material are totally free from bark and apparently**

## Boxdimension

**,584 m³**